

WHAT IS CLAIMED IS:

1. A method for manufacturing a lead comprising the steps of:

placing on a mandrel, a first layer comprising at least one
5 conductor of a first plurality of conductors wherein the at least
one conductor of the first plurality of conductors is spirally
wound in a first direction;

placing a second layer comprising at least one conductor of
a second plurality of conductors on said first layer, wherein the
10 at least one conductor of the second plurality of conductors is
spirally wound in a second direction;

forming a lead body assembly that comprises the first
layer and the second layer;

attaching at least one electrode located at a distal end of
15 said lead body assembly to said at least one conductor of said
first plurality of conductors;

attaching at least one connector located at a proximal end
of said lead body assembly to said at least one conductor of said
first plurality of conductors;

20 attaching at least one electrode located at a distal end of
said lead body assembly to said at least one conductor of said
second plurality of conductors;

attaching at least one connector located at a proximal end
of said lead body assembly to said at least one conductor of said
25 second plurality of conductors; and

removing the lead body assembly from the mandrel.

2. The method as claimed in Claim 1 wherein the second direction is spirally wound in a direction opposite to the first direction.

5 3. The method as claimed in Claim 2 wherein the first layer is a first unitary body.

4. The method as claimed in Claim 2 wherein the second layer is a second unitary body.

5. The method as claimed in Claim 1 wherein one of the first layer and the second layer further comprises extrusion
5 material.

6. The method as claimed in Claim 1 further comprising the step of forming the lead body assembly into a unitary lead body assembly.

7. The method as claimed in Claim 6 wherein the step of
10 forming the lead body assembly into a unitary lead body assembly further comprises the step of forming the first layer and the second layer into a unitary wall, wherein the at least one conductor of a first plurality of conductors and the at least one conductor of a second plurality of conductors are within the
15 unitary wall.

8. The method as claimed in Claim 1 wherein the first layer and the second layer further comprise extrusion material.

9. The method as claimed in Claim 6 wherein the first layer and the second layer are comprised of similar types of
20 extrusion material.

10. The method as claimed in Claim 5 further comprising the steps of:

placing heat shrink tubing over the lead body assembly;

heating the lead body assembly to melt the extrusion

5 material in the lead body assembly;

compressing the melted extrusion material around the at least one conductor of the second plurality of conductors in the lead body assembly;

cooling the lead body assembly to form the lead body; and

10 removing the heat shrink tubing from the lead body.

11. A lead for implantation into a human body, the lead comprising:

a lead body assembly comprising:

15 a wall having an inner portion that forms a lumen;

a first layer having at least one conductor spirally wound around the lumen in a first direction; and

20 a second layer having at least one conductor spirally wound around the lumen in a second direction and interior to the outside of the wall;

at least one electrode located at a distal end of said lead connected to said at least one conductor of said first plurality of conductors;

at least one electrode located at a distal end of said lead connected to said at least one conductor of said second plurality of conductors;

at least one connector located at a proximal end of said
5 lead connected to said at least one conductor of said first plurality of conductors; and

at least one connector located at a proximal end of said lead connected to said at least one conductor of said second plurality of conductors.

10 12. The lead as claimed in Claim 11 wherein the second direction is in a direction opposite to the first direction.

13. The lead as claimed in Claim 12 wherein the first layer is a first unitary body.

14. The lead as claimed in Claim 12 wherein the second
15 layer is a second unitary body.

15. The lead as claimed in Claim 11 wherein one of the first layer and the second layer further comprises extrusion material.

16. The lead as claimed in Claim 11 wherein the lead body
20 assembly is a unitary lead body assembly.

17. The lead as claimed in Claim 11 wherein the wall is a unitary wall.

18. The lead as claimed in Claim 17 wherein the unitary wall comprises of the first layer and the second layer, wherein
5 the at least one conductor of a first plurality of conductors and the at least one conductor of a second plurality of conductors are within the unitary wall.

19. The lead as claimed in Claim 11 wherein one of the first layer and the second layer further comprises extrusion
10 material.

20. The lead as claimed in Claim 19 wherein one of the first layer and the second layer are comprised of similar types of extrusion material.

21. The lead as claimed in Claim 11, wherein the diameter
15 of the lead is no greater than 34 French.

22. The lead as claimed in Claim 11, further comprising at least five electrodes.

23. A system for stimulating a portion of a body, wherein the system comprises:

a source for generating a stimulus; and

a lead for receiving the stimulus from the source, wherein
5 the lead comprises:

a lead body assembly comprising:

a wall having an inner portion that forms a lumen;

an first layer having at least one conductor
10 spirally wound around the lumen in a first direction;
and

an second layer having at least one conductor spirally wound around the lumen in a second direction and interior to the outside of the wall;

15 at least one electrode located at a distal end of the lead body; and

at least one connector located at a proximal end of the lead body, wherein the at least one connector and the at least one electrode are connected by at
20 least one of the conductors.

24. The system as claimed in Claim 23 wherein the second direction is in a direction opposite to the first direction.

25. The system as claimed in Claim 24 wherein the first layer is a first unitary body.

26. The system as claimed in Claim 24 wherein the second layer is a second unitary body.

27. The system as claimed in Claim 23 wherein one of the first layer and the second layer further comprises extrusion
5 material.

28. The system as claimed in Claim 23 wherein the lead body assembly is a unitary lead body assembly.

29. The system as claimed in Claim 23 wherein the wall is a unitary wall.

10 30. The system as claimed in Claim 29 wherein the unitary wall comprises of the first layer and the second layer, wherein the at least one conductor of a first plurality of conductors and the at least one conductor of a second plurality of conductors are within the unitary wall.

15 31. The system as claimed in Claim 30 wherein one of the first layer and the second layer further comprises extrusion material.

32. The system as claimed in Claim 23 wherein the diameter of the lead is no greater than 34 French.

33. The system as claimed in claim 23 further comprising at least five electrodes.